

NWC
ESSAY
93-29

**National Security Policy Process
Research Paper**

ARCHIVAL COPY

JUST GIVE ME THE FACs !

The Case on CAS

**Presented to Dr Ron Tammen
by
Lt Col Mark Welsh**

NATIONAL DEFENSE UNIVERSITY
LIBRARY
SPECIAL COLLECTIONS

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 1993		2. REPORT TYPE		3. DATES COVERED 00-00-1993 to 00-00-1993	
4. TITLE AND SUBTITLE Just Give Me the Facs! The Case on CAS				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National War College, 300 5th Avenue, Fort Lesley J. McNair, Washington, DC, 20319-6000				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT see report					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 15	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

"Neither the Air Force nor the Army wants the close air support mission." (Air Force Times)¹

"In my view, close air support is the Air Force mission of choice. Ideally, we would devote all our combat sorties to CAS." (General Merrill A. McPeak, Chief of Staff, USAF)²

"Air Force combat interest in the mission of close air support is not very high...they would rather easily give up the mission..." (Maj Gen Perry Smith, USAF (ret))³

"Close air support is the work nearest to my heart, the job I most want to do when American lives are at stake...For me, a great day is one that features a 100 percent allocation to close air support." (General McPeak)⁴

"There is a real and strong feeling of abandonment by the Air Force in the Army to this day." (US Army War College Student)⁵

"The Army is happy with the Air Force doing the close air support job." (US House of Representatives report)⁶

Okay...let's get this straight... The Air Force doesn't want the close air support (CAS) mission, but they'd love to devote all their sorties to it. And... the Air Force would "rather easily" give up the CAS mission, even though it's the work nearest to their heart. And... the Army feels the Air Force has abandoned them in the CAS arena, but they're happy with that... (pause for thought) Is anybody else confused?

Sadly, the comments above have been repeated in one form or another for over forty years by a veritable "who's who" among military experts and service leaders. The very simple concept of close air support for friendly troops, born on the battlefields of World War I, has become an absolute nightmare in terms of inter-service rivalry and friction over the ensuing years. Although there is no single document which lists every Army/Air Force disagreement on the subject, the "rational reader's rapid review" process points to two questions which are the meat around each bone of contention:

1. What exactly is "close air support?"
2. Who should do it?

On the surface, neither of these questions appear to be that formidable, so where's the rest of the iceberg? In his book, Essence of Decision, Mr. Graham Allison provides the answer. He asserts that there are three different models which explain behavior: the rational actor model, the organizational process model, and the bureaucratic (personal) politics model.⁷ The unwillingness of the U.S. Air Force and Army to redefine the close air support mission and restructure the force to best accomplish it is the result of

organizational and personal politics rather than an objective assessment of future capabilities and threats. To prove the point, this paper will examine historical background, briefly assess current capabilities and limitations in the CAS arena, highlight the impact of individual personalities on the issue, and close by offering a roadmap for the future.

Where We've Been

The organizational process model stresses the reality that all organizations have standard procedures that are institutionalized over time; ways they traditionally act or respond; certain things they are simply comfortable with.⁸ The Army and Air Force are certainly no different. In regards to the CAS mission, their doctrinal frame of reference was established in 1948, when Secretary of Defense James Forrestal held a meeting of all the service chiefs in Key West, Florida, to establish roles and missions after the Air Force became a separate service in 1947.⁹ The chiefs knew that since future funding would most certainly be contingent on forces and equipment required, the service with the most assigned mission areas would likely have the larger whip when jockeying for position in the budget race--they each pushed hard to gain as many as possible.¹⁰

The Key West Agreement, officially known as the Functions Directive (DOD Directive 5100.1) gave responsibility for close air support of the Army to the Air Force.¹¹ In 1951, Secretary of the Army Frank Pace and Secretary of the Air Force Thomas Finletter signed an agreement which forbid the Army from duplicating Air Force combat functions, and vice versa, an agreement still in effect today. In 1966, the Army and Air Force service chiefs, in response to the Army's desire to use attack helicopters in Vietnam, signed another agreement authorizing the Army to use "rotary wing aircraft for direct fire support." By the late 1960's, Secretary of Defense Robert McNamara's support of armed helicopters and Congressional concern with the quality of CAS in Vietnam gave rise to Air Force fears of losing the CAS mission. To insure that wouldn't happen, the Air Force scrapped plans already on the table for a multi-role fighter, and began the acquisition process on a dedicated close air support aircraft (eventually the A-10).¹² In 1984, the service chiefs signed the "31 Initiatives", a document they called the "culmination of the post-Vietnam War

era of Army/Air Force cooperation." The 31 Initiatives reaffirmed the Air Force mission of providing CAS to the Army. The fact that it required reaffirmation was interpreted by many as an illustration of the traditional distrust between the services.¹³

World War II, Korea

The timeframe in which each of these decisions was reached, and the events driving the decision itself, are critical to a full understanding of the problem as it stands today. When the Key West conference convened, the country was less than three years removed from WWII; the only airborne platform realistically capable of providing CAS was the airplane; and the images of allied aircraft blasting holes in German lines to support the post-Normandy breakout and the sweep across North Africa were fresh in the minds of military leaders. So was the memory of bitter arguments between air and ground generals over who should have direct control of those fighter forces.¹⁴ The initial organizational concept of close air support in both the Army and Air Force had been established...¹⁵

The Air Force, now independent, retained centralized control of close air support during its limited application in Korea.¹⁶ Army commanders felt the 45 minute response times which resulted were ridiculous and also complained about the restriction which kept Air Force CAS aircraft from dropping bombs within four miles of friendly troops. They pointed to the Marine Corps' ability to provide 5-10 minute response time and drop ordnance within a mile of friendly troops and questioned Air Force commitment to the CAS mission.¹⁷ Two points are important to draw from the Korean experience. First, the Army/Air Force disagreement on command, control, and execution of CAS was alive and well 40 years ago. And second, comparison between Air Force and Marine CAS doctrine entered the debate. Both issues are still on the table in 1992.

Vietnam and Congressional Input

Vietnam is where today's Army and Air Force leaders developed their opinions on how CAS "should" be done. Because of the fuzzy battle lines in South Vietnam and concern over friendly and civilian casualties, forward air

controllers (FACs) controlled the great majority of air strikes in the south. About 70% of those sorties were to pre-planned targets, with the other 30% relying on the FAC to give them a target and help them positively identify it prior to their attack. Typically, 4-8 aircraft were all that were tasked to provide CAS in a particular area.¹⁸ Army concerns about response times and level of support resurfaced and led to the emergence of another major organizational actor in this melodrama. Congress, in reaction to the Army's protests, convened a special House Armed Services Committee panel to review the service positions. Their report was not a subtle one: "In its magnificent accomplishments in the wild blue yonder, (the Air Force) has tended to ignore the foot soldiers in the dirty brown under."¹⁹ While the report was clearly an indictment of the Air Force, it also served to reinforce some thoughts on CAS that became part of both organizations' close air support dogma:

- "I would rather have (fixed wing) for CAS than helicopters, because they are a more powerful strike." (Army infantry sergeant's testimony)
- "Helicopter gunships are not a substitute for tactical air." (Chairman of the Joint Chiefs. of Staff)
- "You need a slow speed aircraft to perform CAS." (Congressional report finding)

The first two quotes were based on the limited armament carried by the attack helicopters of the mid-1960's; today's heavily armed versions are an entirely different beast. The third quote was based on the experience of trying to find and hit small forces in triple canopy jungle. This belief was translated directly into the design specifications for the A-10. It's worth remembering that the surface-to-air threat in South Vietnam consisted of small arms and .50 caliber machine gun fire--a far cry from the high threat CAS environment of the 1990s and beyond.²⁰

As the war in Vietnam drew to a close, the Army/Air Force CAS relationship celebrated an acrimonious 25th birthday. Both services, along with the new big kid on the block, Congress, had very definite, and differing, opinions on how CAS force structure should look. The Army, supported by Congress, felt the main thrust of aerial fire support should emphasize the "close" in close air support, while the Air Force felt strongly that attacking supply lines, assembly areas, and lines of communication was the best way to support ground forces. Each side believed they were morally right and that the lessons of Southeast Asia supported their position. Interestingly, the one thing the

services agreed on was the fact that the Air Force, using fixed-wing aircraft, should execute the CAS mission. But the Army also remembered the immediate responsiveness of their own attack helicopter assets, as well as their ability to quickly find and target enemy positions.²¹ The idea of rotary-wing maneuver units had been planted, and would grow to fruition over the next twenty years.

Where We Are

Current Army and Air Force doctrines are both firmly committed to the idea of close air support being an integral, essential part of any ground campaign. The Army's AirLand Battle concept stresses the importance of airpower to commanders at strategic, operational and tactical levels. Congressional testimony indicates the Army sees a side benefit of Air Force responsibility for CAS -- it provides a conduit through which Army leaders can ensure Air Force leaders understand close combat and commit themselves to supporting it.²² Army leaders today also stress that attack helicopters are not close air support assets, but maneuver units.²³ While this may keep them within the legal limits of the Pace-Finletter Agreement (no duplication of combat functions between services), it can also be interpreted as a convenient use of semantics to allow the Army to purchase increased combat capability with money technically designated for support systems. One senior Defense Department official states that, no matter what the Army is calling it, "It's a fact of life that Army helicopters...have taken over part of the CAS mission." Congress seems to agree, saying the Army's current approach to close air support is to use both attack helicopters and fixed-wing assets.²⁴

Definition

Completely overshadowing that disconnect is another grammatical problem that has caused ever-increasing friction in the CAS wheel since Vietnam. No one seems to be able to specifically define "close air support." Former Tactical Air Command Commander, Gen Robert Russ, USAF (ret), pinpoints the problem: "CAS is a term that does not necessarily mean the same thing to all people..." Some Air Force officials will tell you that whether you destroy a

tank 100 meters, or 20 kilometers, away from friendly troops, you are conducting close air support.²⁶¹ Others will say the latter example falls into a completely different category of mission. The same disagreement exists at the operational level of Army staffs. The JCS dictionary of military terms defines CAS as "air actions against hostile targets in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces."²⁶ Congress, DoD, the Air Force and the Army all officially agree with that definition. The problem arises with the individual interpretations of "in close proximity" and "detailed integration." Since the services are forced to justify new weapons systems or upgrades based on a very narrow function definition, the Air Force interprets "in close proximity" much more loosely than other agencies. This allows them to stand under the CAS banner when they try to acquire weapons for attacks against enemy second echelon forces and facilities. They even coined a new phrase, battlefield air interdiction (BAI), to describe the aerial attack on forces that could soon be in direct contact with friendly forces.²⁷ More and more often over the past few years AF leaders have used the term CAS/BAI instead of CAS. The intimation is that close air support involves attacks throughout the width and depth of the modern battlefield, and includes both direct and indirect fire support for maneuver units. This interpretation is the basis for the current Air Force position that a multi-role fighter is the only acceptable choice to conduct the CAS mission, since a classic, dedicated CAS aircraft could not survive missions throughout the depth of the battlefield. The Army, concerned that such an interpretation will lead to a reduced capability to provide direct fire support to troops in contact, leans toward a more literal translation. They also feel that "detailed integration" means more Army control over how, how many, and where CAS aircraft operate, a concept the Air Force is not prone to accept gracefully. Both services are committed to supporting their position, and historical biases flavor virtually every joint discussion on the subject.

Capabilities and Limitations

To understand how organizational politics influence the various CAS debates, it is mandatory to take a realistic look at current CAS capabilities and

limitations. For purposes of this discussion the term "CAS" will refer to air operations against enemy forces in direct contact with friendly troops.

The Air Force dedicates "25% of its fighter force to the close air support-battlefield air interdiction" mission (CAS/BAI rears its head once again). It also commits 40% of its assets to multirole tasking; CAS is included in that "multirole" barrel.²⁸ The Air Force has one dedicated close air support aircraft, the A-10. The number of A-10s in the active inventory is being reduced. Those units which are not simply deactivated are, for the most part, being reequipped with some version of the F-16 multirole fighter. Current projections call for approximately 200 of these F-16s to receive modifications and system upgrades which will dramatically enhance their performance in the close support environment.²⁹ While that will certainly make the Army happy, they will probably not be as happy with the plan for Air Force night and all weather capability. The current plan to improve night CAS capability is to assign F-16s with the low-altitude navigation and targeting infra-red for night (LANTIRN) system to fill that role. While LANTIRN, combined with some of the system upgrades specifically designed for CAS previously mentioned, will give these aircraft a much improved night capability, it will not make large scale CAS operations at night possible. There are simply too many difficulties associated with operating fast (or slow) moving fighters in the dark in a high threat environment.

Severe weather will still make CAS an extremely risky proposition. The aircraft will have the system accuracy to deliver weapons very precisely through the clouds. However, certain assumptions must be made: the coordinates the fighters are passed are accurate; the weapons they drop function correctly; and the people assigning them the targets have positively identified those targets as hostile. If any of those conditions are not met, friendly fire deaths could very easily result. "Betting on the come" in that situation will

not be the preferred choice of either Army or Air Force leaders. If we assume that attack helicopters are, in fact, CAS assets, the Army brings a significant capability to the mission. They field more than 1200 attack helicopters, all with a significant anti-armor capability. The AH-64 Apache provides the only true large-scale, night, adverse weather CAS capability.³⁰ Since these attack helicopters are assigned to the ground commander and typically forward deploy in his area of responsibility, they are immediately

responsive to his needs and already integrated into his command and control network. A side note is that every honest CAS pilot, fixed- or rotary-winged, Army or Air Force, will admit that an attack helicopter can identify, target, and destroy armor vehicles with much greater efficiency than any fighter seen to date.

There is, of course, a flip side to any capabilities discussion. Besides darkness and bad weather, enemy surface-to-air weapons systems should play a significant role in any consideration of the CAS mission. Specialized CAS aircraft have not fared too well in recent conflicts. Possibly the biggest failure of the Falklands War was the abysmal performance of the Argentinian Pukara close air support aircraft. All 30 assigned to the theater were shot down or destroyed on the ground in very short order, mostly by anti-aircraft artillery (AAA) fire. The Soviet Union lost over 300 aircraft in the last 2 years of the Afghanistan conflict to the Stinger, shoulder-fired missile. Most of those aircraft were specialized CAS aircraft, like the Mi-24 Hind attack helicopter and the SU-25 Frogfoot close air support aircraft, the Soviet complement to the A-10. These facts tend to muddy the water, in that while the statistics seem to be against using specialized, low-speed CAS aircraft, they also show conclusively that in at least some environments, the attack helicopter may not be the sole answer to the CAS problem. From an operator's standpoint, many of the positions espoused by the two services in the past have overstated, or underplayed, both capabilities and limitations of current and future CAS aircraft.

Funding

In the opinion of many impartial observers, the military services have "traditionally operated as four separate fiefdoms, constantly feuding for the biggest share of the defense budget."²² With the inevitable scaling back of the defense budget for the foreseeable future, a much more concerted effort must be made to spend money on what's best for military capability as a whole. Parochialism will have to take a back seat if the United States is to maintain the best possible fighting force. Cost efficiencies should be a major consideration in every acquisition proposal. Air Force Deputy Chief of Staff for Plans and Operations, Lt Gen Buster Glosson, put it this way: "You must

look at (procurement of military hardware) not only from a doctrinal standpoint, but from a resources standpoint as well."²² Senator Sam Nunn put it a little more bluntly: "redundancy and duplication is costing billions of dollars every year."²³ Current spending proposals show approximately \$350 billion in projected CAS-capable aircraft acquisitions and/or upgrades.²⁴ The dollar amounts are staggering. With all their programs operating on thinner and thinner margins, the Army and Air Force have the same tendency that all successful organizations have to protect their stock share in a down market. Organizational politics will drive them toward increasing parochialism in the battle for dwindling dollars unless they make a serious departure from previous habit patterns.

How much each service stands to lose if there is an adjustment in the CAS roles/mission position is a very sketchy number. "A lot" may be facetious, but it gets the point across. As an example, should the Army be given CAS, about two-thirds of the Air Force's investment in the tactical air control system, a huge amount of money, will become obsolete overnight. It would be foolish to attempt to assign a value to the aircraft or weapons the Air Force would not receive funding for because the Army, and not the Air Force, now had the requirement. And trying to estimate the cost to the Army of building facilities and an infra-structure to support either fixed-wing or additional rotary-wing aircraft would be a gargantuan task. Obviously, billions of dollars in future force structure and procurement funds are in the balance.

Personal Politics

Allison's bureaucratic (personal) politics model makes the assertion that every decision made is somehow influenced by the personality, prejudices, and personal political power of the decision makers.²⁵ The CAS debate offers hundreds of examples to support that theory. In recent years, Gen Colin Powell, CJCS, suggested to the Air Force that during their projected force cutback, they would need to dedicate 25% of their remaining assets to the CAS mission. That percentage was not based on a formal study, but on the number of aircraft the Air Force had in the end force. Since it was comparable to the percentage agreed to by previous Air Force and Army Chiefs of Staff, it became the planning number for the Air Staff.²⁶ Gen Powell also personally defined

the present debate when he "reversed the recommendation of his predecessor, Adm William Crowe, and insisted that CAS should not be assigned as a function of the Army."²⁷ The service chiefs have historically been at the center of the CAS controversies. In recent years, they have generally presented a unified position on most related issues. Pentagon analysts hint that the chiefs may be using their personal power to quiet disagreement at lower echelons. One such analyst says, "...there have been periodic outbreaks of unrest in the Army, but it gets quelled on the chief of staff level."²⁸

In 1986, the United States Congress, wielding the massive battle ax of individual and collective power of its members, waded into the issues surrounding the CAS debate. The Goldwater-Nichols Defense Reorganization Act requires that the Chairman, JCS, must review service roles and missions every three years.²⁹ Senator Sam Nunn and Congressmen Ike Skelton and Les Aspin have personally led the push to force what they feel is a much needed top-to-bottom scrub of those roles and missions. Senator Nunn led the Senate Armed Services Committee markup of the Fiscal Year 1993 Defense Authorization Bill that holds 50% of the new tactical aircraft programs funding "hostage" until a comprehensive review of service roles and missions is delivered to Congress.²⁹⁶

In the past month, the impact of personal power on the CAS issue has been compounded exponentially by the arrival of President-elect Clinton on the scene. The Pentagon report on roles and missions is on temporary hold until defense department appointments are announced, so that new personalities and preferences can be factored in.⁴¹ President-elect Clinton himself has expressed support for Senator Nunn's views and in fact, stated publicly that, "As president, I will order the Pentagon to convene a meeting (similar to the Key West meeting of 1948) to hammer out a new understanding about consolidating and coordinating military roles and missions in the 1990s and beyond."⁴² While personal politics has been an integral part of the CAS debate for years, indications are that it will play an even larger role in the future.

Where ~~We~~ Should Be Going

To review the bidding...organizational politics have led the Army and Air Force to a subtle disagreement on the basic definition of the close air

support mission. Those same politics have, at least in the Army's opinion, led to conflict over how best to provide fire support for the Army. Understandable service parochialism led to the development of a true CAS capability in both services, but organizational politics forbids the Army's official acknowledgement that their capability exists for that purpose. And throughout the process, personal power played a major role in every decision made. Future capabilities and threat systems may have been factors, but they certainly weren't, and aren't, overriding factors in the decision process. Graham Allison couldn't have dreamed up a better case study for his theory. So...what now?

The Fix

Any solution to an issue involving military capability should look to the most recent application of that capability to help assess the magnitude of the problem. While DESERT STORM lessons learned can be misleading, there are a few items worthy of note. First, it is generally agreed that the Gulf War validated the Army's AirLand Battle doctrine. On the flip side, it also served to highlight the difficulties of conducting close air support, particularly in the area of target identification.⁴³ While the DoD after-action report praises the performance of forward air controllers, with the exception of the Marine Corps' CAS effort, conducted across a relatively narrow front, there was very little true CAS flown during DESERT STORM. Most of the damage done to Iraqi forces, prior to the ground war, was inflicted on what the Air Force would call BAI missions.⁴⁴ Many "experts", along with many Army officers, point to the success of the A-10 as an indication that a dedicated close air support aircraft is the only way to go in the future. A more careful look shows that very little of the A-10's success came on close air support missions. Most of the damage they inflicted occurred on BAI missions before the ground campaign and it came at a cost. Almost half of the A-10s in theater suffered some degree of battle damage, an astronomical percentage compared to the faster, more agile F-16s which flew even more sorties in the same environment.⁴⁵ A-10 success was more a function of the weapons it carried than of aircraft performance. The same weapons can be carried on other, more survivable aircraft.

While recent history gives perspective, any solution must address the specifics of the problem. The place to start in this case is to define close air support to the satisfaction of all players, leaving no significant room for interpretation. Air Force Colonel John Warden's definition -- "any air operation that theoretically could and would be done by ground forces on their own, if sufficient troops or artillery were available" -- might be a good starting point for the discussion.^{30,2} During the give and take that follows, it might be helpful to keep in mind the words of Army Maj Gen Rudolph Ostovich, Vice Director of the Joint Staff: "...an Apache helicopter blowing up enemy tank within direct fire range of friendly forces would be something that looks like, smells like, and is defined as close air support."⁴⁷ The final stage of the definition process must be to eliminate any unnecessary and confusing terminology. The Air Force has already gone a long way in that direction with their July 1992 effort to stop using "CAS/BAI" and limit the mission description to "CAS."⁴⁸

The next step is to honestly examine the real issues involved, such as: do we really need to specify a CAS mission (the Israelis don't have a formal mission for it, but still execute it effectively in combat)⁴⁹; can attack helicopters accomplish the mission for the Army without fixed wing assets; if fixed-wing aircraft are required, who should own them; and can the Marines really do CAS better, and why.

Once those issues are decided, money should be reallocated to reflect the new (?) roles, missions and requirements and both services should get on with life. Looks simple on paper...in practice it will be excruciating for all concerned. But any process that holds the promise of saving as much as \$100 billion over the next five years must be pursued, regardless of comfort level.⁵⁰

End of the Road

The most intriguing and discouraging thing about the entire CAS issue is that the arguments are the same today as they were 20 years ago.^{50,7} Nothing will change in the future unless senior officers in both services, supported, or prodded, by the JCS and Congress, decide to shed their parochial baggage and make some tough decisions. As Clausewitz said, "Never forget that no military leader has ever become great without audacity."⁵² This is a time for audacious leadership....

¹George C. Wilson, "Now is the Time to Fill the Gap in Close Air Support on", Air Force Times 2 Nov. 1992: 21.

²Joe West, "McPeak Reconfirms AF Commitment to Close Air Support", Air Force Times 10 Feb. 1992: 2.

³U.S. House of Representatives, Committee on Armed Services, Procurement and Military Nuclear Systems Subcommittee and Investigations Subcommittee Proceedings, 19 April 1989, Close Air Support (Washington D.C.: U.S. Congress, 1989) 8.

⁴James M. McCoy, "We Need a Slimmer but Still Capable Air Force", New York Times 13 Dec 1992: E-16.

⁵Thomas W. Garrett, Lt Col, USA, "Close Air Support: Why All the Fuss?", US Army War College paper, 1990, 30.

⁶U.S. House of Representatives, Committee on the Armed Services, Investigations Subcommittee Proceedings, 27 Sep 1990, Roles and Missions of Close Air Support (Washington D.C.: U.S. Congress, 1990) 44.

⁷Graham T. Allison, Essence of Decision: Explaining the Cuban Missile Crisis (Harvard University: Harper Collins Publishers, 1971) 6.

⁸Allison 257.

⁹Business Executives for National Security, After the Cold War, How much Defense is Enough? Shaping Military Roles and Missions to Secure the Newly Won Peace (1990) 3.

¹⁰Business Executives 3.

¹¹Business Executives 3.

Richard G. Davis, The 31 Initiatives: A Study in Air Force-Army Cooperation, (Washington D.C.: Office of Air Force History, 1987) 14-21.

¹²Davis 60.

¹⁴David C. Morrison, "Pentagon Dogfighting," National Journal 8 Oct 1988: 524.

¹⁵William W. Momyer, Gen, USAF (ret), Air Power in 3 wars (WWII, Korea, Vietnam) (Washington D.C.: U.S. Govt Printing Office, 1978) 276.

¹⁶Momyer 276.

¹⁷Morrison 2525.

¹⁸Morrison 265, 276, 277.

¹⁹Morrison 2524.

²⁰United States House of Representatives, Committee on Armed Services Proceedings, 22 Sep-14 Oct 1965, Close Air Support (Washington D.C.: U.S. Govt Printing Office, 1966) 4653, 4677, 4695.

²¹U.S. House, 1965, 4677.

²²U.S. House, Apr 1989, 8.

²³Garrett 42.

²⁴U.S. House, Apr 1989, 3.

²⁵David A. Brown, "Logistics Problems Blamed for Reluctance of Air Force to Deploy Night Attack A-7s," Aviation Week and Space Technology, 4 Mar 1991: 65.

U.S. House, 27 Sep 1990, 7.

- ⁷U.S. House, Apr 1989, 73.
McCoy, NYT, E-16.
- ²²John Dobbins, Maj, USAF, Personal Interview, 9 Dec 1992.
- ³⁰Lon O. Nordeen, "The Close Air Support Debate," Military Technology February 1990: 42.
- ³¹Business Executives 6.
- ³²Barbara Opall, "U.S. Air Force Plan Exhorts Shared Role for CAS in Service," Defense News, 2 July 1992: 3.
- ³³Hon Sam Nunn, "The Defense Department Must Thoroughly Overhaul the Services Roles and Missions," Address to U.S. Senate, Washington D.C., 2 Jul. 1992.
- ³⁴"Three Air Forces Too Many," New York Times 3 Aug. 1992: 18.
- ³⁵Allison 257.
- ³⁶Dobbins Interview.
- ³⁷Opall 3.
- ³⁸Morrison 2525.
- ³⁹"JCS Roles and Missions Review to Spur Far-Reaching Changes," Aviation Week and Space Technology 18 Oct. 1992: 23.
- ⁴⁰John D. Morrocco, "Senate Panel Calls for Reassessment of Roles and Missions, Aircraft Plans" Aviation Week and Space Technology 3 Aug. 1992: 25.
- ⁴¹Tony Capaccio, "Roles and Missions Study Awaits New Clinton Crew," Defense Week Nov. 1992: 9.
- Governor Bill Clinton, "Remarks to the World Affairs Council," Los Angeles, 13 Aug. 1992.
- ⁴³John D. Morrocco, "War Will Reshape Doctrine, But Lessons Are Limited," Aviation Week and Space Technology 22 Apr. 1991: 42-43.
- ⁴⁴Lt Col Jim Green, A-10 Squadron Commander during Operation DESERT STORM, Personal Interview, 8 Dec. 1992.
- ⁴⁵Breck W. Henderson, "A-10 'Warthogs' Damaged Heavily in Gulf War but Survived to Fly Again," Aviation Week and Space Technology 5 Aug. 1991: 42.
- ⁴⁶John A. Warden III, Col, USAF, The Air Campaign, Planning for Combat (Washington D.C.: National Defense University Press, Aug. 1988) 102.
- ⁴⁷Neff Hudson, "AF Said To Slight Close Air Support, Could Lose Mission," Air Force Times 9 Nov. 1992: 11.
- ⁴⁸Opall 3.
- ⁴⁹U.S. House 22.
- ⁵⁰David A. Fulghum, "Powell in Crossfire Over Defense Cuts," Aviation Week and Space Technology 7 Dec. 1992: 22.
- ⁵¹Alfred Goldberg and Donald Smith, Army-Air Force Relations: The Close Air Support Issue (Washington D.C.: The Rand Corporation, 1971) 43, 46.
- ⁵²Charles M. Westenhoff, Lt Col, USAF, Military Air Power (Maxwell AFB: Air University Press, 1990) 118.